

GYPSY BAY WATER ASSOCIATION (PWSNO 1090046) SOURCE WATER ASSESSMENT REPORT

October 31, 2002



State of Idaho Department of Environmental Quality

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SOURCE WATER ASSESSMENT FOR GYPSY BAY WATER ASSOCIATION

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Gypsy Bay Water Association, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Gypsy Bay Water Association* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Gypsy Bay Water Association is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. Drinking water for Gypsy Bay Water Association comes from a well on the north side of a hay field near the Brown residence. The water association serves 16 seasonal and 5 year round connections in a recreational area on the south side of the Pend Oreille River about 5 miles west of Sandpoint, Idaho. The well log for Gypsy Bay Water Association is not on file with DEQ. Consequently, many factors used to assess vulnerability to contamination are not known. The well was reportedly drilled in the 1970s to a depth of 100 feet. The 8-inch steel casing extends 10 inches above the concrete floor of the well house and is topped with a steel plate.

Gypsy Bay Water Association was mostly in compliance with *Idaho Rules for Public Drinking Water Systems* when it was inspected in April 1998. The well casing needed to be made watertight and properly vented. The well house needed to have a daylighted drain installed. Improvements were to have been completed by July 30, 1998.

Well Site Characteristics. Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineation. Soils in the well recharge zone for The Gypsy Bay Water Association well are generally poorly drained to moderately well drained. Soils in these drainage classes provide some protection against migration of contaminants toward the well. No information is available about the soil types above the water table at the Gypsy Bay well site.

Potential Contaminant Inventory. Land inside the protection zone delineated for Gypsy Bay Water Association is mostly devoted to non-irrigated agriculture and to low density seasonal housing. An inspection of the system in June 2001 determined that surface waters occupying about a third of the protection zone delineated for the well do not influence the well. Other potential contaminant sources inside the delineated area are a community drainfield and a rail line. Nitrates and microbial contaminants are associated with septic systems. Trains can carry any class of regulated contaminant.

Water Quality History. Gypsy Bay Water Association has had few water quality problems. Sporadic instances of total coliform bacteria contamination in quarterly samples have not been confirmed in follow up testing. Annual tests for nitrates show concentrations ranging from undetectable levels to 0.012 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

Susceptibility to Contamination. An analysis of the Gypsy Bay Water Association well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well moderately susceptible to all classes of regulated contaminants. Unknown risks related to well construction and hydrologic sensitivity account for a total of 9 points in the final susceptibility scores. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The Gypsy Bay Water Association already has some important drinking water protections in place. The system is operated and maintained mostly in compliance with *Idaho Rules for Public Drinking Water Systems*. A locked pump house protects the well head. It might be helpful to fence the sanitary setback zone, a 50 foot radius around the well, as a reminder to keep the area free of grazing animals or application of any agricultural chemicals.

A voluntary measure every system should employ is development of an emergency response plan. There is a simple, fill-in-the-blanks form available on the DEQ website (www.deq.state.id.us/water/water1.htm) to guide systems through the emergency planning process.

The Association should also investigate ground water protection programs like Home*A*Syst or Farm*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Because the Association may not have direct jurisdiction over the entire recharge zone for its well, it will be important to form partnerships with neighboring landowners and public agencies to regulate land uses that can degrade ground water quality. Some of them may not be aware that their property is in a sensitive area where household, agricultural or business practices could have a negative impact on a public water supply. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

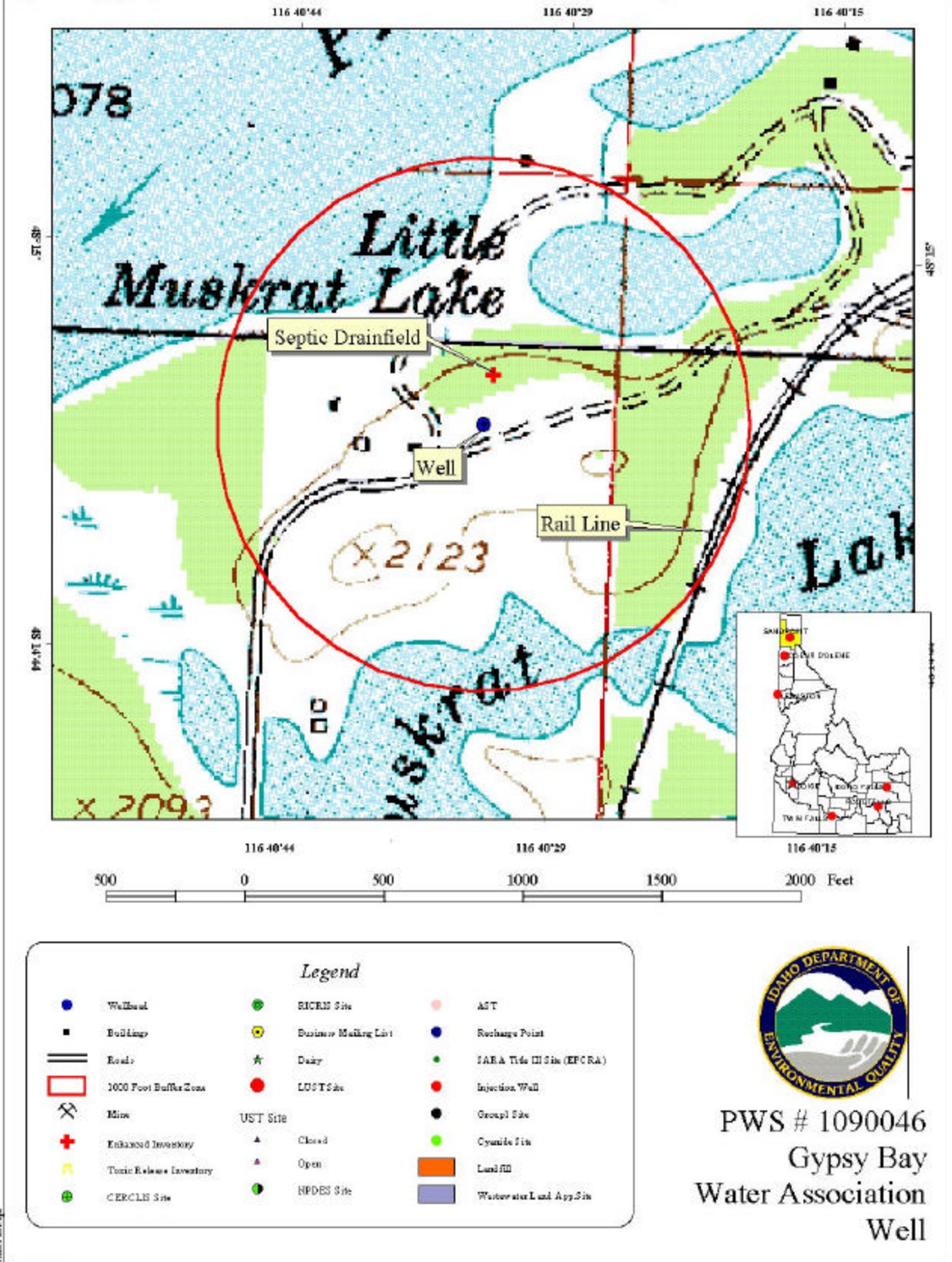
Assistance. Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: www.deq.state.id.us/water/water1.htm

Figure 1. Gypsy Bay Water Association Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name :

GYPSY BAY WATER ASSN

Well # :

WELL #1

Public Water System Number :

1090046

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1. System Construction		SCORE			
Drill Date	Mid 1970s				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1998				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		5			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - SANITARY SETBACK		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Sanitary Setback	DRYLAND AGRICULTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Sanitary Setback		1	1	1	1
Potential Contaminant / Land Use - 1000-FOOT BUFFER					
Contaminant sources present (Number of Sources)	SEPTIC DRAINFIELD, RAIL LINE	2	1	1	2
(Score = # Sources X 2) 8 Points Maximum		4	2	2	4
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		2	1	1	
1000-Foot Buffer contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Buffer	25 to 50% Irrigated Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - 1000-Foot Buffer		8	5	5	6
Cumulative Potential Contaminant / Land Use Score		9	6	6	7
4. Final Susceptibility Source Score		11	11	11	12
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
 6 - 12 Moderate Susceptibility
 > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.